

APPENDIX A
BANANA TREES IN TSINGA VALLEY, IRIAN JAYA

| Banana name | Language | Comments | Wild? | No. |
|-----------------------|------------|--|-------|-----|
| Bencilsel | Anung-kal | Large with long fruits, found everywhere | No? | 1 |
| Borantun | Anung-kal | Small, red, for cooking, grows in village | No | 2 |
| Dampung kung | Anung-kal | Tulawo in some areas | Yes | 3 |
| Dingung | Anung-kal | Very tall, inedible fruit | Yes | 4 |
| Dorakelern | Anung-kal | Large, sweet, for baking, in gardens and Autongama | No | 5 |
| Inebung | Anung-kal | Bake | No? | 6 |
| Iming kelo | Anung-kal | Bake | No? | 7 |
| Kelofavarung | Anung-kal | Large, Ambon banana (introduced) | No | 8 |
| Kerawalart | Anung-kal | Clumps in the forest | Yes | 9 |
| Kualagamun | Anung-kal | E.g. "high vitamins", yellow, bake, in far gardens | No? | 10 |
| Me naro ngelet nolani | Anung-kal | ? | ? | 11 |
| Mel | Anung-kal | Small tree, edible raw stalk, leaves for cooking | Yes | 12 |
| Minagajom-in | Anung-kal | Small white, boil | No | 13 |
| Niwitlenagem | Anung-kal | Bake, from Lower Autongama | No | 14 |
| Pitang nona | Indonesian | Small, sweet, eat raw | No | 15 |
| Pitang rabu | Indonesian | Red, fry, from Timika, resliced to lower elev. | No | 16 |
| Porc | Anung-kal | Very large, sweet, bake, in far gardens | No? | 17 |
| Porcngamin | Anung-kal | Large, green, eat raw | No | 18 |
| Talkinu | Anung-kal | Boil | No? | 19 |
| Tevnyung | Anung-kal | Small, photo roll 41:6 | No? | 20 |
| Tewebuk | Anung-kal | Boil, brought from Lowlands long ago | No | 21 |
| Tsalkinangam | Anung-kal | Sweet fruit, in village | No | 22 |
| Tuju bulani/donge | Indonesian | 7-month banana | No | 23 |
| Tumia | Anung-kal | Small, boil, in church yard | No | 24 |
| Tup | Anung-kal? | Boil or eat raw, has drooping leaves, in village | No | 25 |
| Ukang ki ni kelo | Anung-kal | Large fruit, bake | No | 26 |
| Wamnu | Anung-kal | Small, boil, grows in Autongama | No | 27 |

APPENDIX B

AMUNG-KAL LIST OF FERNS OF TSINGA

| Amung-kal name | Comment | Habit | Edible? |
|--------------------|-----------------|-------|---------|
| Emimpim | | | |
| Igialam | | | |
| Igilu | | | |
| Ilep | may be planted | H | Y |
| Jemmagau | | | |
| Kalagau | | | |
| Kalim nagau | | | Y |
| Kelak nagau | | | Y |
| Kemkinagau | | | |
| Kenong nagau | Tree fern | T | Y |
| Kimakinagau | | | |
| Kitarung | | | Y |
| Kulamagau | | | |
| Mengilagau | | | Y |
| Metam nagau | high elevation | | Y |
| Nagamunong | large fern tree | T | Y |
| Ndagamun nagau | high elevation | | |
| Nimitsimtaga nagau | | | |
| Talagau | | | |
| Usimmagau | | | |
| Wolnalagau | | | |

Habit
 H = herb
 T = tree
 Edible? Y = yes

APPENDIX C
EDIBLE FOODS FROM THE FORESTS OF TSINGA

| Food: common name | #V | Food: common name | #V | Food: common name | #V |
|---------------------------------------|----|---|----|-----------------------------------|----|
| Bananas | 3 | Plant heart foods (besides banana stalk) | 7 | Salt absorbing stems and ant nest | 3 |
| Yams | 10 | Ferns | 5 | Fruits and Nuts | 10 |
| Cucurbits | 4 | Leafy green vegetables | 7 | Mushrooms | 12 |
| Other tubers (Kuelung and Konomun) | 2 | Legumes | 5 | Herbaceous stem foods | 2? |
| Insects | 8 | Marsupials and rats | 32 | Birds and eggs | 53 |
| Snakes | 7 | Frogs | 2 | Ant nests | 1+ |

#V = Number of varieties

**APPENDIX D
TREES OF TSINGA VALLEY**

| Trees and their Uses in Tsinga Valley* | |
|---|--|
| AGANUN: preserved in cleared areas | KEWANALUNG: firewood |
| AGAM NAKAGAM: edible fruit, very tall tree, possibly same as uangagam | KILUNOGOL: <i>Piper</i> sp., leaf and bark used for medication |
| AITAGAMU: hard wood for digging stick and construction | KINGOGOL: trees with large dentate leaves |
| ALELUNG: makes fastest fire | KINGUNG: possibly same as kilunogol |
| ANYAMU: It gray bark, slippery leaves used for waxing arrows. | KITIMUNG: short trees in secondary forest |
| BELAKI: strong building material | KIWUNG: maybe same as kewung, a tree in old fallow |
| BENG or BENGUNG : favorite tree of bees, always pollarded and left in gardens, dead and discarded parts used for firewood | KOALKI: light colored bark, oval leaves |
| BIGIL KOAR: boards for building house | KOATAGAM: hard wood used for digging sticks and construction |
| BOKEPWUNG: firewood | KOGORAM KI: sometimes planted |
| BOMNAGAM: edible fruit | KOGORAMUNG: season indicator with large leaves that are sloughed off twice a year |
| BU-EMKI: sacred tree, may not be cut | KOREMAGAM: a fruit tree |
| BULAGAM: edible fruit, import | KUMINYUNG: makes fast fire |
| CHINGKING: in secondary forest | KWALUNG: hard wood for floor of house |
| DALUNG: makes the hottest fire | KWANALUNG |
| DAPOLUNG | KWEP |
| DELONOGOL: hard wood for making digging sticks | MANGKI: tall canopy tree in forest |
| DELUNG: must be very dry if used in hearth | METEL: bark used for making string, edible fruit (cook young fruit and leaves, eat mature fruit raw) possible nitrogen fixing tree |
| DEVALALUNG BELAK: edible fruits, may overlap with delung, or dibelanung | MINITE: preserved in clearings |

| Trees and their Uses in Tsinga Valley* | |
|---|---|
| DEWELAUKI: leaves elongated, black berries, trees felled in garden clearing process | MOBENGUNG: related to bengung, but smaller, used for firewood, boundary marking |
| DIBELANUNG | MOKOGONG: hardwood for coffins and construction |
| DOM: similar to em jup. but shorter and stouter in stature (a possible casuarina) | MONGUNG: preserved in clearings |
| DOMUNG: possibly same as DOM, trees growing back in fallow | MOKULU: firewood |
| ELALUNG: grows near stream, a large canopy tree, construction | |
| EM JUP: <i>Casuarina</i> sp., construction, support, shade and aesthetic value, nitrogen fixer, pit steaming | MOPAGUM: firewood |
| EROM KWAM: hard wood for digging sticks, edible fruit | NDAHL: sacred tree of the forest, thought to be residence of some earth spirits |
| EMTAWAROKI: a sacred tree from the elevations above 1,800 m | NDEVELAU: tallest of canopy trees, looks whitish from afar, construction |
| EMTAWARKI: a favorite evergreen used to beautify villages, transplanted from elevations above 1,800 m | NDIGINANGUNG: a variety of mobengung: firewood |
| IAMOGOL | NOGOL EM : roofing poles for construction |
| ILAM: inner bark used in making string, slippery bark used in child birth, bark strips used as a bandage to close gash wounds | NINUKMA: a putrid smelling tree, not used |
| JAPUNUNG NAR: construction material, leaves used in childbirth process, firewood | NURENG: possible nitrogen fixing Fabaceae, very thorny, firewood |
| JENG KI: saplings left in cleared areas | OAGAM: tree with edible nut |
| JUETJUP: preserved in cleared areas | OBVUNG: cut in the fallow, but regrows fast |
| KABIGIM: <i>Paraserianthes flaccataria</i> , nitrogen fixing tree saved in clearings, planted near gardens | OKTENOGOL: leaves used as wound plaster |
| KALIMO | ONG KI: edible fruit |
| KALMITIEM: tall trees, left in gardens, but pollarded | ONGOLUNG: firewood |
| KAMURUNG | POKA: soft wood, small tree, produces fruits used for body decoration |

| Trees and their Uses in Tsinga Valley* | |
|--|---|
| KAMUNG 0: very hard wood tree used for caskets | PORENG: a short brushy nitrogen fixing tree, leaves and fruit edible. bark used for men's rear loin cloths, boundary marker and taboo symbol, also used as firewood |
| KAMUT: Fabaceae, nitrogen fixing, but not as effective as Kabigim, preserved in clearings | SAPUNOGOL: a short willow - like tree, the home of edible hemiptera, (mungki) |
| KAPOLKI: small tree in understory of forest | TALOGOL: tall trees, leaves used as plaster for wounds |
| KATAGALUNG: same as Katagaimun? and Kataka em? a tree known for its pitch which makes fast fires | TANKI: firewood |
| KEK NEGELEK JAGAVIN: (fruit?) | TANUNG: firewood |
| KENARUNG: a large tree used for construction | TARANGAMEL: leaves used as women's external childbirth medicine |
| KENEMUNG: fruits attract birds, firewood | UANGAGAM: edible fruit, possibly same as uangung |
| KEVANUNG | UBUNG: hard wood for house frame |

Note: Pandanaceae are listed separately in Chapter Five.

APPENDIX E
GLOSSARY OF BOTANICAL TERMS

Cambium: A layer of tissue, usually one or two cells thick near the outer edge of the stem/trunk, that divides to give rise to secondary tissues, resulting in growth in diameter of a plant or tree.

Cephalia, cephalium: Head-like fruits (plural, singular)

Cultivars: A uniform group of cultivated plants obtained by breeding or selection.

Dicotyledonae/Dicotyledon (dicot plants): A subgroup of the plant division of angiosperms (plants which produce flowers and seeds). It includes most broadleafed trees and shrubs as well as numerous herbs. Dicot embryos have two cotyledons which are food-absorbing leaves as opposed to monocot embryos which contain one.

Distal: Farthest from the point of attachment - or terminal: opposed to proximal.

Drupe: A fleshy one-seeded fruit in which the seed is enveloped by a stony endocarp. Raspberries and pandanus fruits are examples of aggregate fruits composed of drupelets.

Endocarp: The inner layer of the pericarp or fruit wall.

Endosperm: The nutritive tissue formed within the embryo sac of seed plants: it is often consumed as the seed matures but remains in the seeds of corn and other cereals - and pandanus.

Exocarp: The outer layer of the pericarp or fruit wall.

Ovary: That part of the pistil, usually the enlarged base, which contains the ovules and eventually becomes the fruit.

Mesocarp: The often fleshy or succulent middle layer of the pericarp or fruit wall.

Monocot: The common term for monocotyledon, a plant whose embryo has one cotyledon.

Paleotropical monocot: A monocotyledonous plant of the tropics originating very early in time.

Pericarp: The wall of the ripened ovary or fruit wall of which the layers may be fused into one, or be more or less divisible into exocarp, mesocarp and endocarp.

Phylogenetic: Pertaining to the classification based on genetics or natural relationships.

Pistil: The female part of a flower (gynoecium) consisting, when complete, of ovary, styles and stigmas, of one or more carpels.

Pistilate: A unisexual flower with pistil, but no stamens.

Proximal: The end of a leaf nearest the point of attachment to the stem or the point of the stem nearest the trunk.

Stamen: One of the male reproductive organs of a flower.

Staminate: A flower bearing stamens, but no pistil.

Subglobose: Somewhat round in shape.

APPENDIX F
AMUNG SWEET POTATO CULTIVARS IN TSINGA VALLEY

| Amung-kal name | Color | Leaf | Shape | Other |
|--------------------------|------------|-------|-------|-------------|
| Alogomin | | I:1 | | |
| Anom magari | ?:pu/bl | 1:1 | c:? | fuz stem |
| Davogoki | | | | |
| Engke maluk | | | | |
| Inya puk | bwp:w | II:2 | c:2 | |
| Jengma neming | wp:? | II:2 | c:3 | lf no rd/p |
| Kama wu nement | | | | |
| Kela kwe | r,t:w,c | I:1 | c:6 | |
| Kela togomi inya | | | | |
| Kelanogopin | | | | |
| Keloboranung | pt:yo | iv:2 | c:1 | large |
| Kemabu neming | ?:w | ? | c:4 | soft ckd |
| Kilunevinung | | | | |
| Merom | | | | |
| Merom nongop | tw:w | II:2 | c:2 | |
| Metega | g:dk o | | | lk our yam |
| Muru nimpi | pu:yo | III:2 | c:2 | pu: yng g:o |
| Na kotinyung | | | | |
| Natokimung | | | | fm. Atoa |
| Ndabuma | | | | |
| Nenyarakogin/monepdogoin | tw | II:3 | c:5 | y:ck ,eyes |
| Nevenegoun | t,p:? | 1:1 | c:5 | |
| Newel nau | | | | |
| Nireg ki nyung | tb:w | iv:2 | c:1 | lf dp red |
| Niwilanung | | | | long |
| Nonepdogol miming | | | | sek soil |
| Nyeknyarogon-in | ty | | | "eyes" |
| Nyemnyarogome | | | | |
| Nyopakinyung | g:w | I:1 | c:1 | rough out |
| Oerom | | | | lg. leaf |
| Ogolalung kamin | bwg:wp | I:1 | c:1 | |
| Tambainget molan | | | | |
| Telakoya | | | | |
| Temawu neming | ?:y | | c:4 | best flvr |
| Tepelenung | t,c:c | I:1 | c:2 | fine tex |
| Tepenye minung | | | | |
| Titakaming | | | | |
| Togominya | | | | |
| Togonyeng erom | p,pu,y:w/g | | | lf tip thn |
| Tsenalameng | p/pu:c/pu | | | |
| Tseweramget molan | r:c | II:2 | c:1 | red cooked |
| Uaja | t:? | 1:1 | c:1 | |
| Ul pel ganun | tw | I:1 | c:5 | fine tex |

Note: a legend explaining the abbreviations in this table is on the following page (486) and the keys for leaf and tuber classification are on pages 486 and 487.

KEY TO ABBREVIATIONS IN THE AMUNG SWEET POTATO CHART

COLORS

The first abbreviation refers to the outside color of the tuber, the second to the inside color.

A comma indicates either one color or the other and a "/" indicates a marbled effect.

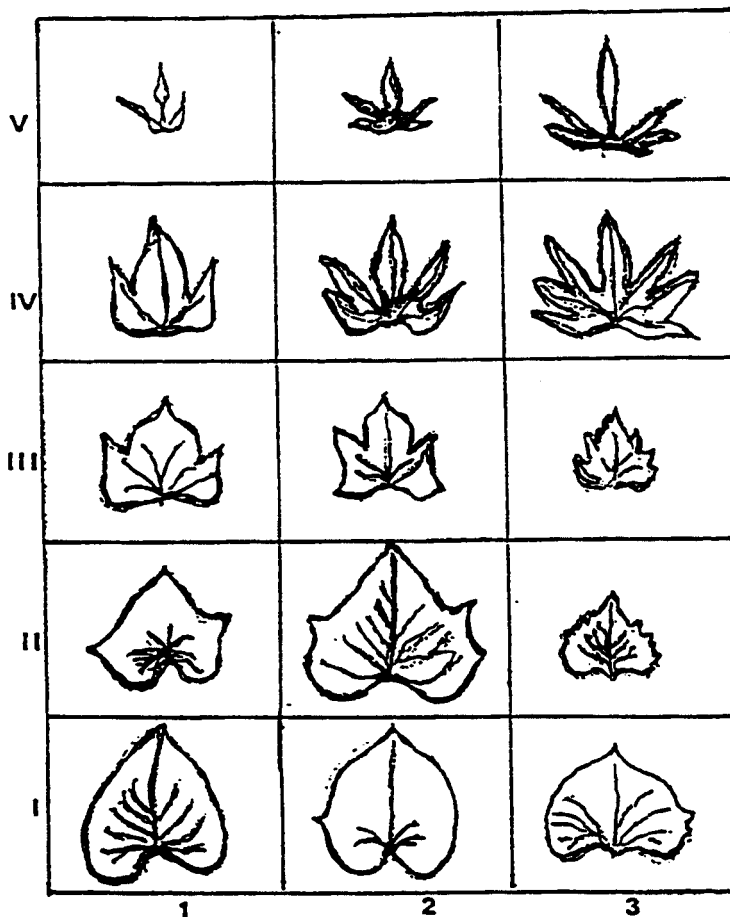
pu = purple
bl = blue
b = brown
w = white
p = pink
r = red
t = tan
c = cream
y = yellow
o = orange
g = gray
dk = dark

OTHER ABBREVIATIONS

fuz stem = hairs erect, soft to touch (pilose)
soft ckd = soft when cooked
lk = like
yng = young
o = old
fm Atoa = from Atuagama
ck = cooked
eyes = eyes prominently indented
lf dp red = leaf color is dark purple to red
sek soil = grows well in the poor *sekerip* soil of Tsinga
rough out = skin has a very rough texture
lf tip thn = leaf tip thin
fine tex = fine texture
lg. leaf = large leaf compared to other *Ipomoea* leaves in this chart
best flvr = best flavor

For leaf and tuber shapes refer to the charts from Yen (Yen 1974) which I used for classifying the *Ipomoea batatas* of Tsinga Valley

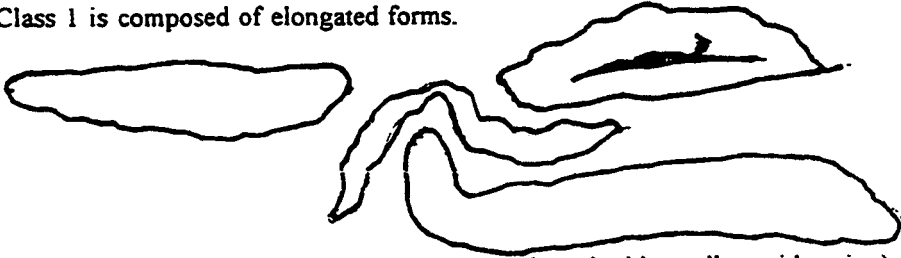
VARIATION IN THE LEAVES OF SWEET POTATO



Yen has formulated this classification chart for *Ipomoea batatas* leaves. I have redrawn it from his figure (1974:196). The arrangement is made in the vertical plane on the basis of degree of reduction of the apical portion of the leaf, bottom to top. On the horizontal plane, the drawings are arranged on the degree of division of the lower lateral portion of the leaf, left to right. My identification of specific Amung cultivars is based on my drawings.

LEGEND FOR CLASSIFICATION OF SWEET POTATO TUBERS

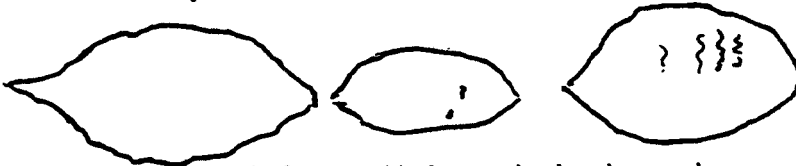
Class 1 is composed of elongated forms.



Class 2 is composed of the fusiform (spindle shaped with swollen mid-region).



Class 3 is composed of ovoid roots.



Class 4 is composed of roots with the proximal end tapered.



Class 5 has the distal end tapered.



Class 6 is rectangular.



Redrawn from Yen (1974:207-210)

APPENDIX G
TARO CULTIVARS IN TSINGA

Colocasia spp. (mo)

| | | | | | |
|--------------|----------------|------------------|---------------|--------------|--------------|
| Blitsim | Kapak | Nidam pakui | Magavikog | Olemun | Pama neming |
| Damung kung | Em Tsing ten | Oikogol | Nolan kot | Neming kawal | Kelokort |
| Nakaukma | Kepati | Minyapi | Migawal | Neming joel | Tsemia kim |
| Itakim | Tenia kem | Japuti | Ndemniogan ma | Tsidukung | Tsiwiakim |
| Tolel | Dewoka | Delkung | Tsilimin | Nakate | Kavia mokort |
| Oik | Ndagalma ki | Nidamun | Oeneming | Tinyagati | Kawan |
| Kairok torel | Ndao ki | Tanok ten | Kitigen | Aganima ki | Kavan ko |
| Kedelam | Deloval | Kapulogol manung | Pakot | Ingbuk | Kitem pawo |
| Nipeng | Kogoning | Bekelek ki | Minya bui | Minyapi | |
| Delokort | Kawingim magau | Nikavalang | Elong kak | Awailyum ki | |

APPENDIX H: SUGAR CANE OF TSINGA

| Amung-kal name | Amung-kal name | Amung-kal name | Amung-kai name | Amung-kal name |
|-------------------|----------------|----------------|----------------|----------------|
| Moanung (elajamu) | Kitikilu | Mokoranung | Nogolal kinu | Jukinung |
| Alakau | Tselinung | Natokinung | Emting elo | Elam elo |
| Iilikilu | Musung | Nawulom | Nogotemun | Nireg nyung |
| Kerung | Jokowung | Minagajomin | Wakalum | |

APPENDIX I
BIRDS OF TSINGA VALLEY

| Amung-kal name | Amung-kal name |
|--|--|
| Amunki (pandanus frequenter) | Kerukularki |
| Awam | Kolamki |
| Aigenomki | Kolonamki |
| Bonelki | Kuagamaki/Kwalamki (pandanus) |
| Bunalik kot | Kuanto (slightly poisonous yellow bird) |
| Damokalam/Damung kolang (black/white, blue, long tail, long beak, bird of paradise) frequents Freycinetia pandanus areas | Kwamki |
| Delmeki (warning bird, near rivers) | Mamolemki (pandanus frequenter) |
| Deongki | Megamki |
| Dongbuk | Menepilikma |
| Elato (lower regions, forest "chicken") | Motoabuk (welcome bird) |
| Eng | Motop (eagle-like) |
| Hasilbek | Napogoi (tiny) |
| Isibilik | Narongbuk |
| Jelewai (mt. cassowary) | Ndilbekma |
| Jelki (bird of paradise with gold feathers) | Negelarki (not hunted) |
| Jemanikung | Neveleveme (tiny, makes pouch nest out of other bird's feathers) |
| Jikang (magpie) | Oakagol ("forest duck) |
| Jimala | Obadunki (carnivorous - may attack babies) |
| Joelki | Olki |

| Amung-kal name | Amung-kal name |
|--|---|
| Kabialeunki | Ongowang (black, long tail) eats Freycinetia pandanus |
| Kaiok | Pamabuk |
| Kalogram (black, white around eyes) frequents Freycinetia pandanus areas | Pinyaki |
| Kalogongki | Pulinang (brown) feeds on Freycinetia pandanus |
| Kawiolem (pandanus frequenter) | |
| Kawama | Tartki |
| Keculamki | Tolki |
| Kegelang | Tsekenang (blue, white, yellow and black) eats Freycinetia pandanus |
| Keluang-o | Wewo nimaki |

APPENDIX J
SOME AMUNG EARTH SPIRITS AND THEIR LOCATIONS

Earth Spirits (*Tu in* and *Tel-me*) of the Amung

| Earth Spirit Name | Location | M/F | Characteristic |
|-------------------|-------------------------|-----|---|
| Bilogame | Mulyu | M | furry all over like a monkey/ punishes for incest (can kill people) |
| | Makbera | F | lives in great cave/ people sacrifice pigs to it |
| Kem magai ki | Jila | F | |
| Oenyemki | Jila | F | |
| Tewari ki | Wa (Mile 64) | F | |
| Bulogoma bug in | ? | M | |
| Hanya jum ki | Wa, mill area | F | |
| Adaminin ki | Wa | F | most wicked of earth spirits |
| Bodemeng in ki | Timika | F | |
| | Mulyu buk | M | also a dream shrine location here |
| Nelkar ki | Tsingogong | M | he is deaf |
| Beanemeng ki | Bea near Tsing River | M? | |
| Kal am ki | Bea/Dolail | F | |

M = male

F = female

APPENDIX K
ORIGIN MYTHS OF THE AMUNG

| Version | Elements | Relationship/effect |
|----------------|---|---|
| 1 | Cave, tree, male female, pigs, dogs, sweet potato, pandanus, language, demon of two parts, cold, firewood | Origin inside earth. People came out together with Herlang, a demon which became two. Half of the demon went into the forest and half followed people. People went into the forest and became cold. Something happened when they went to search for firewood that caused them to change languages. Here the Amung parted from the Moni, Dani and Ekari. |
| 2 | Cave, tree, male, female, kuskus dogs, pigs, plants, wind, rain, cold, fire, language. | Origin inside earth. Kuskus tried to hold people inside. Dog helped them out. Pigs and garden plants were carried out. Wind and driving rain caused them to be cold. They made fire. Some carried fire far west. Others whose fire almost went out made it to islands west. Those who parted, but their fire went out became coastal tribes. |
| 3 | Wind, Rain, Cold, Fire, Tobacco, stone tools, Language | Fire was made as a response to need for warmth. Tobacco was shared. Wind caused separation of languages. People separated into four major groups each of which was defined according to what happened to his fire and differences in appearance. |
| 4 | Foot print in rock, stone tools, wood, fire tools, hunger, brother and sister | Origin inside earth. Woman caused first sin. Brother and sister hungry. Both went to look for food. He returned, she did not. |

These have been related in more narrative form elsewhere in the text. The purpose of this table is to give a quick comparison of the elements of the myths and make it easier to analyze them in the future.

NOTES

Amung-kal names

Throughout this dissertation I have referred to the variety of cultivars in Tsinga. The Amung-kal lists of various trees and foods may be taken as generally describing botanically different plants, but there may be overlap in some cases as the naming of things is not thoroughly integrated. That is, what people call one particular variety of sweet potato in Autoagama may not be the same word used by people in Dol Ail Ningok In. Getting names from a variety of people is necessary, but may also cause certain plants to be recorded twice instead of once. Most of my data on cultivars was taken from people in Beanaikogom and nearby Bini.

Some notes on methodology

Data was collected regarding the technology of the clearing stage; the technology and time of the burning stage; technology and diversity of the planting stage; the cultivation stages, diversity and methods and timing of harvests of new and older gardens, fallow stages and secondary forest. Clearing and burning data were obtained by observation and interview. Diversity of garden plots was measured by taking six 10 meter transect samples of each garden. Plants that grew within a 10 cm. square at each meter mark were recorded with respect to local name (if obtainable) and/or classification such as herb, shrub, or tree with height noted. The location of terraces within gardens was also noted.

The diversity of 8 year to 20 year fallow plots was also measured in 10 meter transects with tree height and name being noted and the varying growth beneath the tree down to the ground cover. This task was much more difficult to accomplish than anticipated as the secondary growth made navigation in some areas nearly impossible. Pandanus/agroforestry data was collected through interviews and trips to the higher areas where pandanus groves are cultivated. I also collected information on the wild pandanus during trips through the forest. Specimens were collected, dried in the houses with hearths and sent to Bishop Museum.

Swidden cultivation data collection

In addition to interviews and participant observation, I used photography and measuring size and diversity of plots. Land use patterns were determined by the tenure status and state of growth of many of the gardens and fallows around the area of Beanaikogom, Bini and Mulyu. A photographic series was made for three swidden areas and two landslide areas. The pictures were taken in both color slides and black and white film on the same day of each month. The purpose being to establish a visible series of the plant growth and history of the land throughout the year.

Data was collected regarding the technology of the clearing stage; the technology and time of the burning stage; technology and diversity of the planting stage; the cultivation stages, diversity and methods and timing of harvests of new and older gardens, fallow stages and secondary forest.

Orientation (north slope, south slope etc.) and elevation were recorded for forest and garden areas. The soil samples were taken from each major garden area and selected secondary and primary forest areas. They were dried in the sun each morning until they could be sealed in zip-lock bags and finally mailed back to Hawaii at the end of the year. Samples were taken from surface, 5 cm., and 10-15 cm deep. Depth of topsoil was noted in areas that were easily accessible or while trekking or in the process of helping with the gardening (i.e. - about how far down will the digging stick go before hitting a rocky or sandy mixture.)